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ABSTRACT

This study examined language development as a precursor of maladaptive behavior in inner-city early adolescents. Participating were 256 adolescents from the graduation classes of 2000 and 2001 who had previously attended District of Columbia prekindergarten/Head Start and kindergarten. The sample was 98 percent African American and 56 percent female. The subjects' teachers completed the Vineland Maladaptive Behavior Domain subscale. Results indicated that based on normative age expectations, only 48 percent of subjects were classified at the Nonsignificant level of maladaptiveness (NM), while 24 percent showed Intermediate maladaptation (IM), and 28 percent were Significantly Maladapted (SM). Among the SM group, boys outnumbered girls, students from poorer families outnumbered those from more affluent families, students from single-parent families outnumbered those from two-parent families, students previously retained in-grade outnumbered non-retained students, special education students outnumbered regular education students, and those not identified as gifted outnumbered gifted students. Kindergarten listening and pre-reading skills of NM children were significantly higher than those of SM peers. Differences in third and sixth graders' Comprehensive Test of Basic Skills scores were most notable between NM and SM students. Kindergarten receptive, expressive, and written language skills of future SM adolescents were significantly lower than those of NM peers. By fourth or fifth grade, both IM and SM students scored significantly lower than NM students in receptive and expressive language. SM students also scored lower than NM students in written language. Eighty percent of SM adolescents were accurately classified based on current language grades. (Author/KB)

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Impact of Language Deficits on Maladaptive Behavior of Inner-City Early Adolescents:

A Longitudinal Analysis

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Impact of Language Deficits on Maladaptive Behavior of Inner-City Early Adolescents:
A Longitudinal Analysis

Previous research has found an increased prevalence of psychiatric disorders among children with language disorders (e.g., Baker & Cantwell, 1987; Cohen, Davine, & Meloche-Kelly, 1989; Cohen & Lipsett, 1991), and parents of language-delayed children report higher levels of behavior difficulties in their children (Beitchman, Nair, Clegg, Ferguson, & Patel, 1986). While the directional nature of this relationship is unclear, Nelson (1973) suggested that behavior problems might be the symptom of language impairment rather than its cause. Similarly, Baker and Cantwell (1987) concluded that language factors may play a more direct role in development of children's psychiatric disorders than previously hypothesized, and often go undiagnosed (Cohen, Barwick, Horodezky, & Isaacson, 1996). While delays in both receptive (comprehension) and expressive (production) language are more notable in children with diagnosable psychiatric disorders (Baker & Cantwell, 1987), receptive delays rarely occur in the absence of socialization problems (Paul, Looney, & Dahm, 1991).

The present research examined language development as a precursor of maladaptive behavior in inner-city early adolescents. This population was of special interest because Baker and Cantwell (1987) found non-Caucasian, language-disordered children from single-parent homes to be at-increased-risk for development of psychiatric disorders.

Method

Participants

As part of a longitudinal study, teachers in 91 District of Columbia Public Schools (DCPS) completed the Vineland Maladaptive Behavior Domain subscale (Part I-Interview ed., Sparrow, Balla, & Cicchetti, 1985) for 256 early adolescents from the Classes of 2000 and 2001 (M age = 147.8 months) who had previously attended DCPS Pre-K/Head Start and kindergarten. The sample was 98% African American and 56% female. Most children (80%) qualified for subsidized lunch based upon low family income, and 77% lived in single parent homes. Since entering school at age four, 38% had been retained in grade, 13% currently

received some special education assistance, and 11% qualified for gifted programs.

Measures and Procedure

The Vineland Maladaptive Domain subscale measures 27 undesirable behaviors that may interfere with adaptive functioning. Behaviors are scored from (0) no, never occurs to (1) sometimes or partially to (2) yes, usually occurs. Scores can range from 0 to 54. Based upon national norms, raw scores were categorized at three levels of maladaptiveness: Nonsignificant (50th percentile or below), Intermediate (51st to 84th percentile), and Significantly Maladapted (85th percentile or above).

Current levels of maladaptive behavior were compared with previously collected measures: a) Pre-K/Head Start, kindergarten, 3rd grade, and current school grades; b) 3rd and 6th grade Comprehensive Test of Basic Skills (CTBS) standardized achievement test scores; and c) Pre-K/ Head Start, kindergarten, and 4th or 5th grade Vineland Adaptive Behavior scores. Analyses focused on relationships between language-related data and current levels of maladaptive behavior. Data were analyzed using a covariate (eligibility for subsidized lunch) to control for possible economic differences between adolescents.

Results

Current Functioning

Maladaptive scores for this sample ranged from 0 to 36 ($M = 8.45$, median = 5), with 80% receiving a score greater than 0 for at least 1 of the 27 behaviors. Table 1 shows specific areas of difficulty. Based on normative age expectations, only 48% of the sample was classified at the Nonsignificant level of maladaptiveness (NM), while 24% showed Intermediate levels of maladaptation (IM), and 28% were Significantly Maladapted (SM).

Insert Table 1 about here

Among those who were Significantly Maladapted, boys outnumbered girls (39% vs 19%, $\chi^2(2, N = 256) = 13.65, p < .001$), students from poorer families outnumbered those

from more affluent (32% vs 12%, $\chi^2 (2, N = 254) = 16.50, p < .001$), single-parent outnumbered two-parent families (32% vs 17%, $\chi^2 (2, N = 210) = 5.49, p = .06$), previously retained outnumbered non-retained (42% vs 20%, $\chi^2 (2, N = 248) = 25.42, p < .001$), special education students outnumbered regular education (38% vs 27%, $\chi^2 (2, N = 228) = 5.92, p < .05$), and those not identified as gifted outnumbered gifted students (30% vs 8%, $\chi^2 (2, N = 224) = 6.59, p < .05$). No difference in maladaptive behavior was noted between those who had attended Head Start versus Pre-K at age 4.

Measures of School Achievement

Table 2 reports ANCOVA differences and post-hoc analyses ($p < .05$) between maladaptive categories in language-related school grades and CTBS scores. Significant differences between the three maladaptive categories were found in all current language-related school grades. While no differences in Head Start/Pre-K grades were found among future NM, IM, and SM adolescents, kindergarten listening [$F (2, 98) = 3.54, p < .05$] and prereading skills [$F (2, 106) = 3.19, p < .05$] of NM children were significantly higher than those of future SM peers. Significant differences were also evident in third grade (see Table 2). Differences in 3rd and 6th grade CTBS scores were most notable between NM and SM students.

Insert Table 2 about here

Earlier Language Development

Examination of Vineland Communication subdomain scores indicated no difference between maladaptive categories during the Head Start/Pre-K year. However, by age 5, kindergarten receptive [$F (2, 93) = 4.47, p < .05$], expressive [$F (2, 93) = 4.19, p < .05$], and written [$F (2, 93) = 3.42, p < .05$] language skills of future SM adolescents were significantly lower than NM peers. By 4th or 5th grade, both IM and SM were significantly lower than NM in receptive [$F (2, 164) = 6.61, p < .01$] and expressive language

[$F(2, 164) = 4.51, p < .05$]. SM was also lower than NM in written language [$F(2, 163) = 7.19, p < .001$].

Predicting Maladaptive Behavior

Multiple regression analysis was used to predict current maladaptive behavior. Each set of grade-related variables was entered separately as a block. Variables with a significant beta and the resulting cumulative R^2 were as follows for each block: a) 3rd grade CTBS: language mechanics, $R^2 = .025$; b) 6th grade CTBS: spelling, reading comprehension, total reading, $R^2 = .130$; c) kindergarten Vineland: receptive language, $R^2 = .079$; d) 4th or 5th grade Vineland: receptive, written language, $R^2 = .106$; e) kindergarten grades: listening, $R^2 = .075$; f) 3rd grade report card: spelling, $R^2 = .089$; and g) current grades: language, $R^2 = .187$. These significant variables were entered into stepwise regression. Only current language grades had a significant beta ($-.432$) accounting for almost 19% of the variance in current maladaptive behavior. Discriminant analysis indicated 80% of SM adolescents could be accurately classified based upon current school grades in language. However, NM and IM were not as accurately classified by language grades.

Discussion

Early and ongoing deficits in language skills are related to later behavioral difficulties in inner-city early adolescents. The appearance of difficulties in kindergarten suggests children may have successfully masked deficits in Pre-K/Head Start through nonlinguistic strategies. Although language deficits accounted for less than 20% of the variance in maladaptive behavior, early intervention in speech and language may prevent development of more severe behavioral disorders in these especially high risk adolescents.

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Table 1

Areas of Difficulty for Children who Displayed Some Maladaptive Behavior

	Yes, Usually	Sometimes
Sucks thumb or fingers	7%	12%
Is overly dependent	12%	38%
Withdraws	8%	29%
Wets bed	0%	< 1%
Exhibits an eating disturbance	1%	5%
Exhibits a sleep disturbance	< 1%	5%
Bites fingernails	13%	18%
Avoids school or work	23%	36%
Exhibits extreme anxiety	11%	23%
Exhibits tics	< 1%	3%
Cries or laughs too easily	16%	18%
Has poor eye contact	10%	21%
Exhibits excessive unhappiness	8%	22%
Grinds teeth during day or night	1%	2%
Is too impulsive	11%	24%
Has poor concentration & attention	29%	40%
Is overly active	17%	26%
Has temper tantrums	13%	25%
Is negativistic or defiant	14%	35%
Teases or bullies	16%	30%
Shows lack of consideration	13%	32%
Lies, cheats, or steals	5%	20%
Is too physically aggressive	10%	23%
Swears in inappropriate situations	9%	15%
Runs away	2%	7%
Is stubborn or sullen	17%	38%
Is truant from school or work	6%	15%

Table 2

Measures of School Achievement by Maladaptive Categories (means adjusted for covariate)

	Maladaptive Category			
	Nonsignificant	Intermediate	Significant	ANCOVA
<u>School Grades</u>				
Reading				
3 rd Grade	2.36 ^a	2.16 ^b	1.61 ^{a, b}	F (2, 195) = 6.68 **
6 th Grade	2.57 ^{a, c}	2.04 ^c	1.71 ^a	F (2, 134) = 11.78 ***
Language				
3 rd Grade	2.56 ^a	2.35 ^b	1.93 ^{a, b}	F (2, 195) = 6.15 **
6 th Grade	2.60 ^a	2.32 ^b	1.72 ^{a, b}	F (2, 136) = 13.65 ***
Spelling				
3 rd Grade	2.79 ^a	2.36	1.91 ^a	F (2, 195) = 8.35 ***
6 th Grade	2.68 ^{a, c}	2.08 ^c	1.73 ^a	F (2, 135) = 10.89 ***
<u>CTBS Achievement Test</u>				
Total Language				
3 rd Grade	56.77 ^a	54.16	42.52 ^a	F (2, 143) = 5.97 **
6 th Grade	56.86 ^a	50.44	49.35 ^a	F (2, 153) = 3.16 *
Spelling				
3 rd Grade	57.14 ^a	49.52	46.60 ^a	F (2, 141) = 4.16 *
6 th Grade	61.64 ^a	54.51	47.79 ^a	F (2, 153) = 7.69 ***
Language Mechanics				
3 rd Grade	57.56	58.65	49.94	ns
6 th Grade	57.69 ^a	51.48	48.97 ^a	F (2, 153) = 3.62 *
Language Expression				
3 rd Grade	54.01 ^a	50.04	38.76 ^a	F (2, 143) = 6.20 **
6 th Grade	52.10	47.22	47.16	ns
Total Reading				
3 rd Grade	51.05 ^a	46.38	42.89 ^a	F (2, 143) = 3.19 *
6 th Grade	50.53	49.27	47.30	ns
Reading Vocabulary				
3 rd Grade	52.18	49.35	45.29	ns
6 th Grade	51.01	49.38	49.74	ns
Reading Comprehension				
3 rd Grade	49.76 ^a	44.12	41.12 ^a	F (2, 143) = 3.72 *
6 th Grade	50.85	49.25	43.17	ns

Note. In each row, means sharing a superscript are significantly different. Grades could range from 0(F) to 4(A). CTBS scores are expressed in standard score units with $M = 50$. * $p < .05$ ** $p < .01$ *** $p < .001$